Research and Palestine’s health news.
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RESEARCH NEWS

First ‘Functional HIV Cure’ in an Infant

A case report of “functional cure” of HIV in an infant was presented on the third of March 2013, at the 20th Conference on Retroviruses and Opportunistic Infections (CROI) in Atlanta. The lead author of the report is Deborah Persaud, a Johns Hopkins Children’s Centre virologist.

The infant was born to an HIV-infected mother and 30 hours after birth he received combination antiretroviral treatment. Tests showed progressive decrease of the virus until it became undetectable 29 days after birth. The infant remained on antiviral drugs until 18 months of age, at which point he was lost to follow-up and stopped treatment. Ten months later, he underwent repeated standard blood tests, none of which detected HIV in his blood. Test for HIV-specific antibodies were also negative.

The infant is regarded as “functionally cured”, this means the viral presence is so minimal, it is undetectable by standard clinical tests but discernible by ultrasensitive methods.

The investigators believe that “the prompt administration of antiviral treatment likely led to this infant’s cure by halting the formation of viral reservoirs which are dormant cells responsible for reigniting the infection in most HIV patients within weeks of stopping therapy”, However they caution they don’t have enough data to recommend change right now to the current practice of treating high-risk infants with prophylactic, rather than therapeutic doses.

The researchers note that there is a single case of sterilizing cure (a complete eradication of all viral traces from the body) has been reported, where an HIV-positive man treated with a bone marrow transplant for leukaemia. The bone marrow cells came from a donor with a rare genetic mutation of the white blood cells that make some people resistant to HIV.


Focal therapy for localised prostate cancer is effective and reduces side effects

A prospective development study led by Hashim Ahmed, University College London, showed that focal therapy by high intensity focused ultrasound (HIFU) for unifocal and multifocal prostate carcinoma caused early absence of clinically significant prostate carcinoma and reduced the genitourinary side effects which are common if the disease is treated by radical whole gland surgery or radiotherapy.
The trial recruited 42 men aged 58-66 years between 2007 and 2010. They all had low to high risk localised prostate cancer. They received HIFU to all known cancer lesions with a margin of normal tissue. This caused focal ablation through thermal, mechanical and cavitations effects.

The men were followed up at 1, 3, 6, 9 and 12 months. The PSA was measured and compared to the pre-treatment (baseline) measurement. They also completed a questionnaire about side effects.

Compared to the baseline, the PSA showed a significant decrease and the patients, although had early self-resolving urinary tract symptoms; they reported a low rate of genitourinary symptoms and a good satisfaction with genitourinary function.

The researchers conclude that “focal therapy of individual prostate cancer lesions, regardless of whether they are multifocal or unifocal, leads to a low rate of genitourinary side effects and an encouraging rate of early freedom from clinically significant prostate cancer”

Source: www.thelancet.com/oncology June 2012

**Blood derived endothelial progenitor cell used to generate pluripotent stem cells.**

Imbisaat Geti et al describe using late-outgrowth endothelial progenitor cells (L-EPCs) derived directly from peripheral blood, to produce induced pluripotent stem cells (iPSCs).

iPSCs can generate patient-specific tissues for disease modelling, tissue replacement and delivery of gene therapy. Skin fibroblasts are the most common cells used to generate iPSCs, however, isolation of these cells needs a surgical procedure and they reprogram with relatively low efficiency. Moreover, it was found that many fibroblast-derived iPSCs have some genetic alterations to the cells they were derived from. A currently acceptable alternative is the use of T and myeloid cells derived from venous blood sampling which is a minor and well tolerated procedure, but again these have some limitations; these cells have a low capacity to expand in culture and a low reprogramming efficiency. Another alternative is hematopoietic stem cells that can be reprogrammed with high efficiency but obtaining these cells needs bone marrow aspiration.

The researchers tried using late-outgrowth endothelial progenitor cells as a new substrate for cellular reprogramming. These cells arise from the mononuclear cell fraction of peripheral blood which is obtained by density gradient centrifugation. The sample is then cultured on collagen and L-EPCs appeared between 10-14 days.

L-EPCs were highly proliferative. They doubled every 24-48 hours. They also could be frozen and thawed without affecting their viability or cell phenotype. Moreover they had a high reprogramming kinetics and efficiency; they formed iPSC colonies 10 times more than two fibroblast lines that were used as a comparison. Importantly, the derived iPSCs were more karyotypically similar to the parent L-EPCs.
The research is promising, as it described the use of peripheral blood to produce a pluripotent stem cells with the advantages of overcoming most of the problems arose when other cell types were used.

The researchers conclude that “ L-EPCs are readily obtained from peripheral blood, with minimal manipulation. Their use allows a routine, efficient, and potentially high throughput generation of IPSC lines having a karyotype matching that of the parent somatic cell”

Source: A practical and efficient cellular substrate for the generation of induced pluripotent stem cells from adults: blood derived endothelial progenitor cells. Imbissat Geti et al. Stem cell translational medicine, December 2012. Published online November 2012.

**Efficacy and effectiveness of Influenza vaccine**

A systemic review and meta analysis showed that influenza vaccines can provide moderate protection against virologically confirmed influenza but with some seasonal variations as the protection can be reduced or absent in some seasons.

The authors searched Medline for observational studies and randomised controlled trials which assessed the reduction in influenza risk of all influenza viruses after vaccination. They screened 5707 articles published between 1967 and 2011 and identified 31 eligible studies (17 randomised controlled trials and 14 observational studies)

Efficacy of trivalent inactivated vaccine (TIV) was shown in 8 (67%) of the 12 seasons analysed in 10 randomised controlled trials, whereas efficacy of live attenuated influenza vaccine (LAIV) was shown in 9 (75%) out of 12 seasons.

LAIVs showed high efficacy in young children aged 6 months to 7 years, but evidence of protection in adults more than 65 years of age was lacking.

The authors conclude that “new vaccines with improved clinical efficacy and effectiveness are needed to further reduce influenza related morbidity and mortality.

Source: efficacy and effectiveness of influenza vaccines: a systemic review and meta analysis. Prof M Osterholm et al. The lancet infectious disease, volume 12 issue 1 January 2012. Published on line; October 2011.

**PALESTINE’S HEALTH NEWS**

**Swine flu season**

The ministry of health in Palestine reported 600 cases of H1N1 influenza cases among the Palestinians in Gaza and the West Bank till 8/1/13. Thirty of these cases were in Gaza strip.

The number of H1N1 flu deaths reached 21, one of which was in Gaza. The majority of deaths occurred in children, elderly and immune-suppressed persons. The ministry of Health in the West Bank had a programme to give the flu vaccine to these vulnerable groups.

Source: [www.moh.ps](http://www.moh.ps) 8/1/13.
Life expectancy increases among Palestinians

Statistics regarding life expectancy in Palestine have shown an increase in life expectancy among Palestinian males and females as compared to the last twenty years.

Life expectancy has increased from 67 years for both sexes in 1992 to 71.3 for men and 74.1 for women in 2012. The statistics show that, in general, Palestinians in the west Bank lived longer than those in Gaza.

Dr Al Betar, the head of the health information department in the ministry of health in the West Bank stated that he believes the increased life expectancy is related to the better health services, increased number of health workers and increased numbers of hospital beds.

The ministry’s statistics indicate that the leading cause of death is cardiovascular disease (25% of reported deaths in 2011) with cancer being the second common cause of death (12%).

Source: www.moh.ps 6/1/13

WHO report on health access barriers on the Occupied Palestinian Territories

The WHO released a report on the 5th of March 2013 detailing the difficulties Palestinian patients encounter in obtaining Israeli permits to access specialized health care in East Jerusalem, Jordan and “Israel”.

The results are summarised as follows:

- “In the West Bank, one in five patients, companions and visitors who applied through the Palestinian Authority for Israeli permits to enter Jerusalem to access hospitals was denied.”

  It was documented that 81.4% of applicants were approved in 2011 and 79.7% approved in 2012. The remaining applicants were denied or did not receive a response in time for their medical appointment.

- “In Gaza, approval rates were higher. 89.8% were approved to cross Erez checkpoint in 2011 to access hospitals in East Jerusalem, Israel or Jordan; 10.2% were denied permits or did not receive a response in time to access their hospital appointment. ”

  “In 2012, 92.5% of Gaza patients were approved, while only 0.9% were denied; 6.6% did not receive a response in time .”

- “Ministry of Health referrals in the occupied Palestinian territories show a gender gap which narrowed from 2011 to 2012: total referrals: from 46% female/54% male in 2011 to 47% female/53% male in 2012 (in 2012 West Bank: 48% female/52% male; Gaza: 45% female/55% male).”
Donated medicines to Gaza

The WHO reported that more than 75% of the donations of medicines sent to Gaza in 2009 were unsuitable and hampered relief efforts.

The report emphasises the importance of medical aid to Gaza but it puts some important guidance and advice regarding such aid.

They advise to contact the Ministry of Health in Gaza for updates on the latest needs and to purchase medication from companies that use reliable quality control which complies with international standards for packaging, labelling and other quality requirements.

They listed the medications unsuitable to be donated which included: expired medicines; medicines near expiration date (less than one year); partially-used medicines; free samples; products of uncertain quality and products that are poorly labelled.

The advice also states that the costs of international and local transport, warehousing, port clearance and storage should be met by the donor. To facilitate entry procedure, donors need to present comprehensive and fully accurate paperwork which includes a detailed packing list, specifies the goods' contents, dosage, form, quantity, expiry date, volume and weight.

Source: www.emro.who.int